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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/577,032	05/23/2000	Kunihiro Tashiro	1324.64102	3410

7590

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EXAMINER

DUONG, THOI V

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/577,032

Applicant(s)

TASHIRO ET AL.

Examiner

Thoi V Duong

Art Unit

2871



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 May 2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 and 17-20 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-9 and 17-20 ~~is/are~~ rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. Figures 104-114c should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In regarding claim 1, it is unclear where a light reactive area is in the sealing material. With respect to claim 4, it is also unclear what “a transfer added colored particles” is and how it is electrically connected to the two substrates.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 5 is rejected under 35 U.S.C. 102(a) (assumed) as being anticipated by Applicant's Prior Art Fig. 111.

Applicant's Prior Art Fig. 111 discloses a LCD comprising:

two substrates 1108 and 1116 sandwiching liquid crystal and opposing to each other;

a main seal 1106 attaching the two substrates at an external peripheral portion of a display area of the substrates;

a frame-shape structure 1111 formed in the area between the main seal and the display area; and

a black matrix picture-frame 1108 shading an area between the main seal and the display area;

wherein an external peripheral end of the frame-shape structure and an external peripheral end of the black matrix picture-frame are formed to be coincide with to each other viewing from a perpendicular direction to the substrates; and

wherein the frame-shape structure has a height substantially half of that of a spacer arranged in the display area.

5. Claims 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Eiji (JP406202124A).

As shown in Figs. 1, 2, and 3, Eiji discloses a LCD comprising two opposing substrates 11 and 12 which are attached by a frame-shape sealing material 12 formed outside of a display area forming a plurality of pixels further comprising a plurality of concave shape structures 15 formed inside the sealing material 18, wherein the plurality of the structures are distributed on the substrate at a predetermined arrangement density or a predetermined arrangement shape.

6. Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Matsushima (USPN 6,391,137 B1).

As shown in Figs. 12 and 13 Prior Art, Matsushima discloses a LCD comprising two substrates 1 and 2 attached by a sealing material 3 formed outside of a display area forming a plurality of pixels and a hollow frame-shape sealing material 4 formed at an external periphery of the sealing material 3.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagayama et al. (USPN 6,384,882 B1) in view of Shuichi (JP 11-015007).

As shown in Fig. 5, Nagayama discloses a liquid crystal display (LCD) having a sealing material 4 sandwiched between two substrates comprising: a blue-colored layer 25B and a shading area 16 which contacts the sealing material and overlays the blue-colored layer transmitting blue light with a red-colored layer to transmit color light and a green-colored layer to transmit green light; wherein the red-colored layer, the green-colored layer and the blue-colored layer are respectively made of the same material as a forming material of color filters of red, green and blue formed corresponding to each pixel (col. 5, lines 30-68; col. 6, lines 1-3).

Nagayama discloses a LCD that is basically the same as that recited in claims 1 and 2 except for a sealing material made of a photo-curing type material irradiated with a wavelength of blue color band. Shuichi discloses a LCD comprising a photo-curing type sealing material which is irradiated with light having 380 nm wavelength or longer (see Abstract). Accordingly, the sealing material is activated with a wavelength in the range of a blue color band (approximately 380-550 nm). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD of Nagayama with the teaching of Shuichi by employing a photo-curing type sealing material irradiated with a wavelength of blue color band so as to prevent curing defects and to obtain an inexpensive and reliable display.

9. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art Fig. 111 in view of Takuya (JP11-119230).

Applicant's Prior Art discloses a LCD that is basically the same as that recited in claims 6-8 except for a perpendicular alignment film formed on a surface of the frame-shape structure and a second frame-shape structure formed in an external area of the main seal. As shown in Figs. 1 and 6, Takuya discloses a LCD comprising a first frame-shape structure 43a, a second frame-shape structure 43b, a perpendicular alignment film 30 formed on a surface of the first frame-shape structure 43a, a perpendicular alignment film 30a formed on a surface of the second frame-shape structure 43b, a sealing material 61, and a black matrix picture-frame 62 which is formed on the two frame-shape structures and not formed on the seal formation area. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD of Applicant's Prior Art with the teaching of Takura by forming a perpendicular alignment film on a surface of the first frame-shape structure and a second frame-shape structure so as to uniformly hold the gap of the display.

10. Claims 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka et al. (USPN 6,323,924 B1) in view of Shuichi (JP11-015007).

As shown in Fig. 5, Matsuoka discloses a LCD comprising a sealing material 19 sandwiched between two substrates 11 and 12 comprising a light-reflection layer 14 having a concave-convex structure 14b formed in an area contacting with the sealing materials of the first substrate 11 (col. 4, lines 7-10). Matsuoka discloses a LCD that is basically the same as that recited in claim 9 except for a photo-curing type sealing

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material. Schuichi discloses a LCD comprising a sealing material irradiated with light having 380 nm wavelength or longer for bonding panel substrates (see Abstract). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD of Matsuoka with the teaching of Schuichi by employing a photo-curing type sealing material to seal the display with an inexpensive method.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Williams Sikes, can be reached at (703) 308-4842.

Thoi Duong



07/18/2002



William L. Sikes  
Supervisory Patent Examiner  
Technology Center 2800